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ABSTRACT

This paper notes the proliferation of literature about the characteristics of Japanese education and culture. Generalizations ranging from reports of remarkable progress in subject disciplines to praise of Japanese technology, social and individual behavior, and systematic accomplishments have been cited. It is contended in this study that some of the research on education in Japan has been of dubious quality, and that there is considerable risk in making or adopting generalizable statements from the literature. Quoting specific studies, the paper highlights the following biases characteristic of research on Japan and its educational system; (1) biases due to one-sided presentations eliminating conflicting evidence; (2) biases resulting from the use of tertiary citations based on secondary citations and their relationship to unverified primary sources or citations (unverified facts); (3) biases due to methodological error and the scholarship of understanding, reporting, and interpreting; (4) the Japanophile bias; and (5) biases due to "Halo Effect" (allowing an overall impression to influence analysis of specific behaviors) and to the inherent logical argument. These biases challenge the validity of some of the information in the extant literature. (SY)

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JAPAN: EDUCATIONALLY RELEVANT GENERALIZATIONS AND INHERENT RESEARCH BIASES

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Daniel P. Antonoplos

Introduction

Current concerns for the effectiveness of our educational system, a number of special reports detailing the crisis and problems of American education including: A Nation at Risk, High School: A Report on Secondary Education in America; Action for Excellence: A Comprehensive Plan to Improve Our Nation's Schools; and the Paideia Proposal: An Educational Manifesto, have spurred considerable interest in potential solutions and alternative strategies to address the goals of educational effectiveness in the United States.

This state of affairs has also stimulated considerable interest in the understanding and utility of foreign educational models as potential metaphors or "mirrors" through which our educational problems might be viewed, and their solutions thus made more transparent.

Japan because of its described reputation as a "Learning Society" and its remarkable progress in education as reflected by: a geometric increase in university graduates; percent of pupils graduating from the secondary school levels; the superior performance of Japanese students on (IEA) international comparisons in mathematics and science and its industrial productivity has received considerable interest and attention as a model deemed worthy of exploration. Over the last few years major publications such as Japan As Number 1 (Vogel, 1979); Education and Equality in Japan (Cummings, 1980), The Mind of the Japanese (Christopher, 1984) and many articles testify to the praise enjoyed by the Japanese for their accomplishments.

There are a considerable number of generalizations reported in the literature regarding the characteristics of Japanese education and aspects of culture that are assumed to either influence those characteristics or serve as expressions and outcomes related to the accomplishments of Japan. These generalizations range from achievements in the discipline subject areas to technology, social and individual behavior and systemic accomplishments. They have been suggested by a variety of authors, scholars and others writing about Japanese education and culture. They are reported with citations for consideration as examples of objective and subjective impressions which have attained a status of common knowledge about the Japanese.

It is the contention of this author that some of the research on education in Japan has been of dubious quality and that considerable risk in making or adopting generalizable statements from the literature should be recognized. The problems of generating conclusion-oriented research of high quality objectivity, internal validity, external validity and reliability are paramount in descriptive studies, ex post facto research or in large scale international comparisons where multivariate factors interact to influence educational outcomes. Furthermore, in my opinion, there are several biases characteristic of research on Japan and its educational system that should be noted. These include:

- o biases due to one-sided presentations eliminating conflicting evidence.
- o biases resulting from the use of tertiary citations based on secondary citations and their relationship to unverified primary sources or citations ("unverified facts").
- o biases due to methodological error and scholarship in understanding, reporting and interpreting data.
- o the Japanophile bias.
- o biases due to the "Halo Effect" and to the inherent logical argument.

These biases challenge the validity of some of the information in the extant literature. One must proceed with scholarly caution in reviewing generalizations regarding Japan's educational system. The literature and popular press is often riddled with the above problems as well as seductive image-making, outright propaganda and biased interpretations.
The following examples might help to illustrate some of these concerns:
The one-sided presentation: bias.

In his article on "Scientific Literacy and Economic Productivity in International Perspective (1983, Daedalus) Dr. Herbert Walberg on pages 21-22 states: "recent British research shows that currently about five times as many Japanese as Americans and Western Europeans reach superior I.Q. levels and 77 percent of them exceed the mean of about 100 in Western countries, a mean that has remained stable since World War II." (citation, R. Lynn, 1983)

In his paper, Professor Walberg has neglected to note that Lynn's assertions have been called into serious question by Stevenson and Azuma (1983) Vining (1983) and Flynn (1983). These investigators have pointed to an array of methodoloical problems and the fact that Lynn had not actually tested the Japanese and American student he was comparing but based his analyses on information available in the standardizations of the Weschsler Intelligence Scale for Children-Revised (WISC-R) in the United States and Japan.

In addition, the existing norms had not been obtained in a comparable manner, and Lynn had failed to control for socioeconomic status and location. That is, there were serious socioeconomic and urban-rural differences between the information on Japanese and American students leading to spurious comparisons. Furthermore, re-examination of the statistical information indicated the Japanese variances were significantly lower than purported by Lynn.

These conditions challenge both the validity and credibility of Lynn's conclusion.

Furthermore, Dr. Walberg attributes the Lynn purported rapid postwar rise of the Japanese average I.Q. (103 to 111) that has been challenged by other scholars "to the social environment, family circumstances, education, health, and other human capital investments and enhancements." This is a meaningless statement as it encompasses almost all aspects of culture.

Tertiary citation, secondary citation and unverified empirical primary citation (unverified "fact")

Dr. Walberg continues on page 22 of the Daedalus paper that "nor have such gains been made at the expense of the development of other talents and accomplishments, even civilities. Japanese students lead the world in mastery of musical instruments and foreign languages and in the rate of high school completion. Japan ranks first in the number of patents granted and novels published..." (citation, Vogel, 1979, Japan As Number 1)

Walberg, as the tertiary citation was referring to Vogel the secondary citation who was referring not to empirical data based on a world study of musical accomplishments among a representative sample of the "worlds" involved, but to Cummings' (1980, p.121) observations of an undefined sample of music classes. Cummings' does, however, report that "The first time I saw this level of achievement (in music) I could not believe my eyes. But after the fifth primary school, I had to recognize it was widespread." Perhaps Dr. Cummings should operationally define the concept of "widespread" in this situation. Finally, the assertion regarding Japan's leading position in the world on the number of patents and the interpretations of accomplishments it gives rise to may be misleading. Research conducted by Katherine Lewis (1986) for the United States Study Team under written specifications has

noted that the phenomenon of patents issued is inextricably tied up with the company reward system to employees and has a different tone, connotation, and significance in Japan. Companies reward their employees for generating patents, therefore, there may be a tendency toward patent proliferation in Japan.

- o biases due to methodological errors and scholarship in understanding, reporting and interpreting data.

Methodological problems will always characterize educational research wherever the deductive structures of mathematics are applied to the observation and perception of social-science phenomena. The important thing is to recognize methodological inadequacies and, where possible, control or account for them.

The Lynn (1982) assertions regarding the average I.Q. of the Japanese and Americans, based not on actual testing of Japanese and American students but on data extracted from the standardization of the WISC-R in Japan and the United States, is a glowing psychometric example. This has been discussed with reference to the "one sided" presentation bias.

Typical problems in the scholarship of understanding, reporting and interpreting data include the following:

Vogel on page 159 of Japan as Number 1 (1979) states:

> "....Fourteen year old Japanese scored second to their Hungarian counterparts in biology but first in physics...chemistry and practical science."

However, the data shows in the tables provided by Comber and Keeves (1973) the following for biology, the performance reported by Vogel I am calling into question:

Country	Biology	(Ranked by this investigator)
Japan	0.46	3
Hungary	0.73	1
Others in the distribution of nineteen countries		
Thailand	0.64	2

Obviously, Japan did not rank second in biology among the comparison nations but ranked third, following Thailand, a non-industrialized nation. Another example may be seen in the analysis provided by Tanuichi (1985) in her commisioned research paper to the U.S. Study Group titled: "Classroom Discipline, and Management in Japanese Elementary School Classrooms." Utilizing Comber and Keeves (1973) on Science achievement, Tanuichi says:..."an international comparison of science achievement in nineteen countries found that Japanese 10 and 14 year olds consistently ranked first or second place in scientific information as well as understanding." The data in the tables provided by Comber and Keeves with reference to the Japanese performance on "information" however, do not show a ranking of second place for ten year olds (population I), but show to this investigator a ranking of fourth place as illustrated by the following data extracted from the table for ten year olds (population I p. Table 6.4, p. 122 Comber & Keeves)

Country	Scientific Information	(Rank by this investigator)
Japan	0.22	4
Thailand	0.47	1
Sweden	0.24	3
Belgium	0.32	2

According to the Comber & Keeves data tables, Japan's performance on scientific "information" was surpassed by Thailand, Belgium, and Sweden.

It is obvious that serious caution needs to be exercised in the identification and acceptance of generalizations about education in Japan reported in the literature. Furthermore, much of the literature should give cause for intellectual suspicion where uni-directional generalizations are offered. This becomes more notable where generalizations are based not on empirical evidence but on subjective impressions approaching folklore.

The Japanophile Bias

There is much to admire and appreciate of the Japanese culture. Many writers in the popular press and scholars in the literature are avid fans of Japan. This situation is quite characteristic of many educationists, sociologists and anthropologists dedicated to the production of written text on Japanese education. This affinity for the Japanese culture has also found its expression in mastery of the language and frequent travel to Japan on one's own and under the auspicies of the Japanese Ministry of Science, Education, and Culture. This can have a "chilling effect" on objective evaluation, exemplified by an intention to "keep the lid on," or maintain at best, a neutral to positive position or in selectivity in reporting findings. As is often the case, the investigator-author may be both socially and economically involved with the culture he is reporting on. In this situation, the investigator himself might be an "uncontrolled variable" influencing the results of the study, because of special relationships enjoyed with the subjects.

Most researchers place objectivity and scholarship first. However, the researcher conducting research on education in Japan needs to be aware of this potential bias when arranging and designing the research study, when reviewing research in the extant literature, and in selecting reviews or commissioned research reports from the community of scholars specializing in the Japanese culture and its educational system.

Related to the Japanophile bias is the "halo effect" bias often extended to the Japanese by many writers. The "halo effect" is characterized by one's allowing an overall impression of the subject to influence the description, measurement and analysis of the specific behaviors or judgments in question. (Gephart & Antonoplos, 1969)

An example of the halo effect bias may be found in the article based on a presentation delivered by Dr. Robert Spitzer (1984). Following an apparent reiteration of Vogel's generalizations or generalizations similar to those of Vogel (Source citation not offered) such as:

"Today, Japan leads the world in:

- Steel, autos, shipbuilding, cameras, watches, consumer electronics audiovisual products, amino acids, robotics, knowledge intensive development, surface public transport, international marketing, database services...
- Average math and science aptitudes of its high school graduates, the U.S. is ninth. Also leads in language proficiency. The U.S. is 14th...
- Graduating 22,000 electronics engineers per year from 117 million population vs. 19,000 in the U.S. from 230 million people...
- Standard I.Q. 111 in Japan vs. 100 in U.S. 77% of Japanese score higher than Americans. 10% score above 130 I.Q. vs. 2% in U.S. The reason is parental guidance and home education in formative years 2-6...
- Fewest national and local government employees per capita of all developed nations 44.9/1000 vs. 82.4/1000 in U.S."...

Dr. Spitzer explains the "how they have done it and what can we learn from their success," with a list of overall halo-like generalizations that include:

"o strong feeling for discipline
o deep sense of family and community loyalty.
o some people say they are not overly religious but I believe they are quite religious and active in their faiths.
o the Japanese are hard workers. They appreciate participation in quality circles.

- o they are a well dressed people who display a sense of pride in their appearance. This is particularly important in education where it should be conveyed to the student by the teacher through example."
- o they appreciate cleanliness, beauty and flowers.
- o they are not quick to take on new responsibility but incredibly faithful to responsibility."

Both sets of generalizations, i.e. those relating to the issue of Japan's "leadership" position and those generalizations relating to "how they have done it", require thoughtful discussion, empirical data, and analysis of the value claims implied by the generalizations. With respect to the leadership items, we are asked to accept:

the implicit assumption that leadership is definable-a) numerically by frequencies in- b) nominally scaled not necessarily comparative categories across nations of-C) unequal resources and-d) distributed and selective efforts. This assumption can be questioned on logical grounds. Furthermore, the reliability and stability of the leadership generalizations can be questioned on empirical grounds. For example, with reference to the steel, shipbuilding, and international marketing industries, these industries (and international trade) are monitored and formally reported on a monthly basis by the Commerce Department because trends vary as well as production frequencies within categories. It was recently reported to this investigator that Korea has now the most impressive and up-to-date steel plant and is currently shipping steel to Japan, and that Japanese shipbuilding is on the downturn. Many of the other generalizations regarding "leadership in the world" should be examined with the same kind of scrutiny. Finally, the implicit logical argument that:

> because Z has chosen X, it is better or characterizes leadership than Y's choice of W should be examined. For example,

> rather than the number of electronics engineers graduating per year, it might be more useful to understand the distribution and range of professionals graduating (when examining the dimension of professionals) within and between comparison cultures.

With respect to the halo-like characteristics, some of these characteristics described by Spitzer may or may not be normally distributed variables in any population, e.g. "appreciation of cleanliness, beauty and flowers." Surely, ethnic and racial homogeneity and social uniformity in Japan may account for less variation than that found in many pluralistic cultures. However, to what extent are they really accurate generalizations and, where empirical data is available, how well do they fit the data? For example, Spitzer's assertions that the Japanese have a "deep sense of family and community loyalty...are religious and quite active in their faiths," can be challenged based on empirial data as noted by Antonoplos (1986).

In the 1984 Third World Survey Conducted by the Prime Minister's Office, Japan, in which the attitudes of 11,000 youth across comparison nations that included Japan, the United Kingdom, France, the Republic of Germany, Switzerland, South Korea and the United States were sampled, Japanese students were found to be among the lowest in desire to "contribute to society," of all the comparison nations. Dissatisfaction with society and community was further indicated by the extent to which Japanese youth appeared to value their country. In response to the question, "Are you prepared to sacrifice your own interest for your country?," the Japanese ratio of 16.3% was the lowest among the participating countries. In comparison, the United States was among the highest, 60.0% responding affirmatively...In fact, the ratio of society-oriented responses was lowest among Japanese youth, 36.5% (next to West Germany 27.9% the lowest) while youth in the United States at 55.5% were the third highest in society-oriented responses among the nations participating in the survey. (Antonoplos, 1986, manuscript)

General satisfaction with homelife was about 90.0% for all countries except Japan and Korea, where it ranged in the 70's. The reasons given by Japanese students were "parents don't understand me, too much tension at home, and don't have enough income."

Furthermore, with regard to family relations and loyalty, Japanese students report relationships with mother are "not too bad", but relationships with father were described as thin or shaky. Japanese students were also second from the bottom on reported "participatory activities with parents." In comparison, students from the United States ranked high on the participation with parent variables...When asked, "Whom do you consult regarding your troubles and worries?", Japanese students rate friends highest at 52.9%, mother second at 35.7%, colleagues third at 17.9% and father fourth at 17.8%. In contrast, United States students rank mother first at 58.9%, brothers and sisters second at 39.9%, father third at 35.1%, and friends fourth at 17.8%, keeping nearly all of it in the family, so to speak!

With regard to religion, 74% of Japanese youth report "no interest in religion" which according to Naka (1977), Japanese Youth in Changing Society, is outstandingly high and differentiates Japanese youth from the youth of other nations (Antonoplos, 1986).

Finally, in understanding and accounting for these generalizations and halo-like properties described in the general literature, we need to understand what cultural dynamics or trade-offs are involved. Do the behaviors observed and recorded represent "choice" on the part of the individual mediated by an internal "locus of control," or are they the result of external manipulation and social engineering validating other perceptions of the Japanese culture as coercive, emotionally dependent and lacking in creativity and individualism.

To what extent are these latter generalizations accurate and should they be given equal time?

Perhaps the critical variable is that "they have the fewest national and local government employees per capita of all the developed nations", and this variable should be written into the "success" regression equation!

BIBLIOGRAPHY

Antonoplos, D.P., "Perceptions and Attitudes of Japanese Students," (Unpublished manuscript) 1986.

Comber, L.C., Keeves, S. Science Achievement in Nineteen Countries, New York: Wiley, 1973.

Cummings, W.K., Education and Equality in Japan, Princeton: Princeton University Press, 1980.

Flynn, J.R., "Now the Great Augmentation of the American I.Q." Nature, Volume 301, 24 February 1983.

Gephart, W., Antonoplos, D.P., "The Effects of Expectancy and Other Research Biasing Factors," Phi Delta Kappan Journal, June 1969.

Lewis, C., "Education in Japan: The Creativity Issue," Commissioned Research for the United States Study of Education in Japan, OERI, Department of Education, 1986.

Lynn, R., "The Intelligence of the Japanese" Bulletin of the British Psychological Society, 30, 69-72, 1977.

Lynn, R., "I.Q. in Japan and the United States Shows A Growing Disparity" Nature, Volume 297, 20 May 1982.

Prime Minister's Office, 1984 Third World Survey, (Report) Management and Coordination Agency, Japan.

Prime Minister's Office, International Comparisons on Youth and Family, (Report) Japan, May 1982.

Spitzer, R., "What the Japanese Have Done to the U.S. and Why It's Good for The U.S." Presidential Address, Milwaukee School of Engineering, 1984.

Stevenson, H.W., Azuma, H., "I.Q. in Japan and the United States." Nature, Volume 301, 24 February 1983.

Vining, D., Jr. "Mean IQ. Differences in Japan and the United States" Nature, Volume 301, 24 February 1983.

Vogel, E.F., Japan As Number 1, New York: Harper & Row, 1979.

Walberg, Herbert, J., "Scientific Literacy and Economic Productivity in International Perspective." Daedalus 112 (1983): 1-28.